Fish Scales

Largemouth Bass

Have you ever touched a fish? What did it feel like? Most people say fish feel slimy, and that is for a good reason. Fish are actually covered in a coating of slime called a slime coat. The slime coat helps to protect the fish from bacteria and parasites. The slime coat even helps fish to move more easily in water, as it reduces friction. What lies beneath this coat of slime in many fish? You're right, it's scales! Scales are hard and form a protective layer around many fish, much like a suit of armor scales protect fish from injury.

Did you know that scales grow? That's right, in fact as a fish grows larger, the scales grow larger also. Scales grow by adding rings around the outside edge of the scale (see the picture below). A scale may add anywhere from two to twenty rings a year. More rings mean more growth. In the summer months, when food is plentiful fish tend to grow more than in the winter months when food is more scarce and temperatures are lower. The growth rings also grow very close together during the winter.

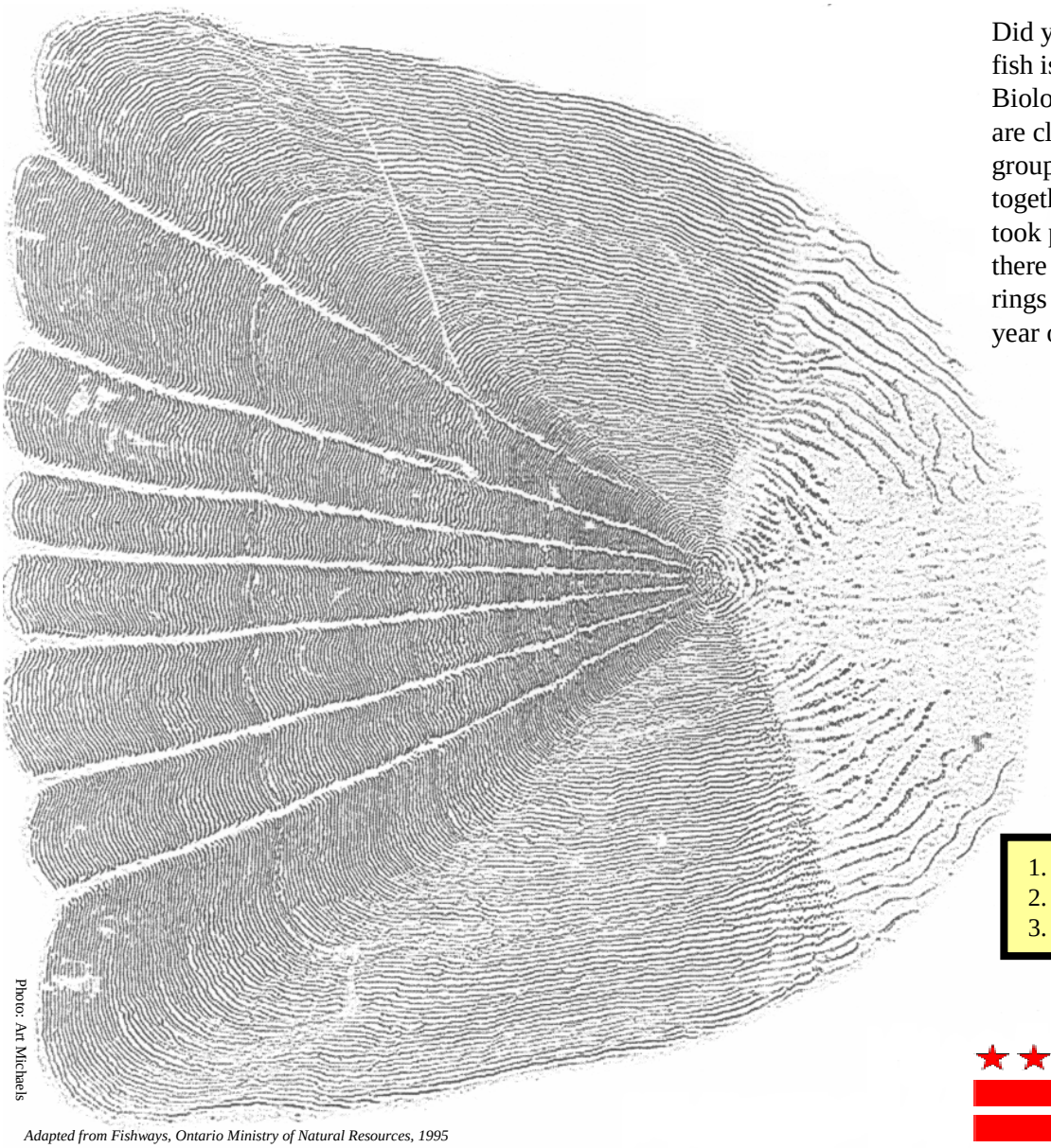

Photo: Art Michaels

Adapted from Fishways, Ontario Ministry of Natural Resources, 1995

Did you know that you can tell how old a fish is by looking at a fish scale? Biologists look at the growth rings that are close together. Each time you have a group of growth rings that are close together, it represents fish growth that took place during the winter. Every year there is one winter time, so each set of rings that are close together equal one year of growth.

Information that biologists get from studying fish scales help them to learn more about individual fish, groups of fish, and their habitat. Ultimately age information helps in fisheries management, by providing information that can lead to sound decisions about size limits and stocking. Looking at the scale to the left can you answer the questions below?

1. How old is this fish?
2. What causes a fish to grow slowly?
3. What causes a fish to grow fast?

Answers on other side

District of Columbia
Department of Health
Bureau of Environmental Quality
Fisheries and Wildlife Division

Answers:

1. This fish is three years old.

2. Fish tend to grow slower when the water temperature is cold, food is in short supply, and during times of stress such as that due to pollution or spawning stress.

3. Growth rates are highest when water temperature is warm and food is in ample supply.